In the Claims

Cancel claims 32 and substitute new claims 33-47.

33. (new) An integrated semiconductor structure comprising

a multijunction solar cell including first and second solar cells on a substrate; and

means integral to a portion of said first solar cell for passing current when said multijunction solar cell is shaded.

34. (new) The structure as defined in claim 33, wherein said first solar cell is formed on a first portion of the substrate and said means for passing current is a bypass diode formed on a second portion of the substrate.

35. (new) The structure as defined in claim 34, wherein said first solar cell is epitaxially grown and said bypass diode is epitaxially grown in the same process.

36. (new The structure as defined in claim 35, wherein such epitaxially grown diode is electrically connected across at least said first and second cells to protect such first and second cells against reverse biasing.

37. (new) The structure as defined in claim 34, wherein the bypass diode has a Schottky contact.

38. (new) The structure as defined in claim 33, wherein the substrate is Ge.

39. (new) The structure as defined in claim 33, wherein the second solar cell is fabricated at least in part with InGaP.

40. (new) The structure as defined in claim 33, wherein the first solar cell is fabricated at least in part with GaAs.

41. (new) A solar cell semiconductor device comprising:

an integral semiconductor body having a sequence of layers of semiconductor material including a first region in which the sequence of layers of semiconductor material forms at least one cell of a multijunction solar cell; and a second region laterally spaced apart from said first region and in which the sequence of layers forms a bypass diode to protect said cell against reverse biasing.

42. (new) A device as defined in claim 41, wherein the sequence of layers of said one cell and the sequence of layers of the bypass diode are epitaxially grown in the same process step.

43. (new) A device as defined in claim 41, wherein the semiconductor body includes a Ge substrate, and a solar cell fabricated at least in part with GaAs.

44. (new) A solar cell semiconductor device comprising:

a substrate;

a sequence of layers of semiconductor material deposited on said substrate, including a first region in which the sequence of layers of semiconductor material forms at least one cell of a multijunction solar cell; and a second region in which the sequence of layers forms a bypass diode to protect said cell against reverse biasing; and

a lateral conduction layer deposited on said substrate for electrically connecting the multijunction solar cell to said bypass diode.

45. (new) A solar cell semiconductor device comprising:

a substrate;

a sequence of layers of semiconductor material deposited on said substrate, including a first region in which the sequence of layers of semiconductor material forms at least one cell of a multijunction solar cell; and a second region laterally spaced apart from said first region; and

a metal layer deposited on a portion of said substrate and over at least a portion of said second region for electrically shorting the layers of said second region to form a bypass diode in said second region.

46. (new) A solar cell semiconductor device comprising:

a substrate;

a sequence of layers of semiconductor material deposited on said substrate, including a first region in which the sequence of layers of semiconductor

material forms at least one cell of a multijunction solar cell; and a second region lataerally spaced apart from said first region adapted for forming a bypass diode;

a lateral conduction layer deposited on said substrate for electrically connecting the multijunction solar cell to said bypass diode; and

a metal layer deposited on a portion of said substrate and over at least a portion of said second region for electrically shorting the layers of said second region to form a bypass diode in said second region.

47. (new) A solar cell semiconductor device comprising:

a substrate;

a sequence of layers of semiconductor material deposited on said substrate, including a first region in which the sequence of layers of semiconductor material forms at leasat one cell of a multijunction solar cell having first and second polarities; and a second region laterally spaced apart from said first region adapted for forming a bypass diode having first and second polarities;

a lateral conduction layer deposited on said substrate for electrically connecting the first polarity of the multijunction solar cell to the second polarity said bypass diode; and

a metal layer deposited on a portion of said substrate and over at least a portion of said second region for electrically shorting the layers of said second region to form a bypass diode in said second region and connecting the second polarity of the multijunction solar cell to the first polarity of said bypass diode.